"could" be implemented on a single processor having a complex design and operating at a high data rate to perform these operations, but would suffer from complexity and synchronization issues. The Meyer Patent therefore proposes as a solution a specific, three processor system having a master digital signal processor that recognizes variable control information, and that directs control data and video data to two other processors as appropriate. At portions of the Meyer Patent cited by the Examiner, the Meyer Patent discusses conventional methods of decoding image slices including sending different slices for a given frame to parallel decoders. Using multiple processors to process different slices in decoding is common in compressed video decoding, and has utterly no pertinence to the present invention.

The present invention, and Applicants' claim language, relates to the fact that during compression (not decoding), motion compensation is constrained so that motion vectors *cannot point* away from or outside of data in a different, anchor (or reference) frame also representing the region of interest (but in the different frame). The purpose of this feature in the invention relates to ability to extract limited amounts of compressed data for a sequence, i.e., because a dependent frame may require decompression of an anchor frame, the entire sequence would conventionally have to be decoded in MPEG-2 to extract a region or object unless one could from the compressed bitstream also identify and extract any anchor data (which practically speaking could be located in a different geography of the frame). To take an example of this operation from Applicants' specification, what this means is as multiple frames are sliced, an anchor frame will have both certain slices associated with a region of interest (e.g., the "ball" of Applicants' FIG. 2, and corresponding slices "A" and "C" of FIG. 21) and certain slices that are not associated with the particular region (slices "B" of Applicants' FIG. 21). When a frame is to be compressed as a "dependent" frame, i.e., with motion vectors that point to another, different frame for reconstruction, what Applicants' claim is that motion search is limited for the dependent frame (e.g., the frame of Applicants' FIG. 14) such that motion vectors for data representing the ball in the dependent frame are constrained to necessarily *not point* to other unrelated regions in the anchor frame (e.g., the data within slices "B" from Applicants' FIG. 21). Otherwise stated with reference again to Applicants' example, the motion vectors for Applicants slices "A" and "C" of Applicants' FIG. 15 are constrained such that they may not point to data in regions "B" of Applicants' FIG. 21. Through this operation, Applicants' system may extract and decode only limited geographies within a frame (FIG. 14) by identifying corresponding slices in that frame (FIG. 14) and, on a limited basis, *just that anchor data* necessary to reconstruct the geographies

of the dependent frame (FIG. 14), i.e., data within a subset of slices for the prior image frame (FIG. 21) used as a reference by the geographies of the dependent frame.

In this regard, Applicants' invention relates to a way of decoding limited parts of a video sequence without decoding the entire frames of the entire sequence; by contrast, the Meyer Patent calls for decoding every frame, in its entirety, in sequence, but for doling out image slices to parallel decoders as each frame is being decompressed... the entirety of any anchor or reference frames would have already been decompressed as is conventional for decoders.

The Meyer Patent has absolutely no structure, operation or suggestion that relates to Applicants' claim language. Rather, the Meyer Patent (especially at the portions of that patent cited by the Examiner) simply explains how slices for a single frame may be distributed to different decoders for decoding. In the structure illustrated in the Meyer Patent, anchor or reference frames have been decoded, and the motion vectors for dependent frames are conventional and are conventionally decoded; every frame may have a different number of slices, which the Meyer Patent indicates are distributed in round-robin fashion. There is no suggestion in the Meyer Patent that one should link specific sets of slices in an anchor or reference frame (e.g., a prior frame) with specific sets of slices appearing in a dependent (later, different frame), and decode "only" the linked sets; similarly, there is no disclosure that requires certain slices from multiple frames to go to one and only one decoder, e.g., the round robin-distribution called for by the Meyer Patent could feed slices to a different decoder for a different frame.

Indeed, Applicants are unable to understand why the Meyer Patent is relied upon beyond the fact that it mentions the word "slices." "Slices" are conventionally used in MPEG-2 processes, and conventionally may be distributed to parallel decoders (this is why FIG. 5 of the Meyer Patent lists is listed as being "prior art"). This type of operation has no bearing on the Applicants' claim language, e.g., Applicants are not claiming "any" parallel processing of slices within a frame, but rather the fact that motion vectors are constrained during compression so that groups of slices are mutually-independent across multiple different frames in a sequence. This structure of the Meyer Patent and conventional MPEG-2 slices processing have absolutely no bearing on Applicants' claimed operation.

As expressed in Applicants' last response, Applicants' rejected claims present substantial differences relative to the cited art. There are very substantial differences between both of the Bailleul and Meyer Patents and the present invention - neither reference deals with independently coded regions, such that select image slices may be decoded and edited without decoding data for

other image slices. As mentioned in Applicants' last response with respect to the Bailleul Patent, without complete image decoding, it would be necessary to employ less accurate, lower quality image estimation steps (because of needed data in the unencoded slices). [Again, it is noted that by expressing this teaching, the Bailleul Patent actually provides evidence of patentability of the present invention.] Citation of the Meyer Patent does not solve any shortfall in differences between the Bailleul Patent and Applicants' claims 11-20, and the Meyer Patent is no more pertinent to the present invention than conventional MPEG-2 processes. Neither cited reference teaches or suggests a solution whereby select images may be extracted and decoded from the bitstream using information, for example, region maps, to identify a subset of image slices for a frame that permit complete spatial domain reconstruction without needing data from the other image slices for the frame that are not part of the subset. Applicants note here that because of the iterative nature of predictive coding, Applicants' solution not only focuses on slices of interest for a current frame, but also focuses on a related subset of slices for any reference frame (and any reference frame for that reference frame, and so on) - this operation is expressed by the requirement that motion search be limited such that motion vectors point to only selected geographies of any anchor frame, and is not shown by any of the cited art. Applicants believe these differences are so substantial that there is no justification for rejecting Applicants' claims based on Section 103(a) - again, the Bailleul Patent indicates that another (estimation) approach is the only alternative short of complete image decoding (*see the Bailleul Patent, column 5, lines 44-5*).

Finally, Applicants again emphasize with particular regard to claims 16 and 20 that these claims further relate to use of a region map identifying slice mapping inserted within the frame header of a compressed video bitstream; in the rejection, the Examiner again asserted obviousness without any support *whatsoever*, i.e., the Examiner doesn't even point to any use of this feature in the prior art, and Applicants assert that this evidentiary failure amounts to a failure to demonstrate a *prima facie* case *per se*. [It should be noted here that the Examiner's statements are not themselves evidence, and to the extent the Examiner is asserting that the use of region maps are well known art, Applicants respectfully invoke MPEP §2144.03 and require the Examiner to demonstrate region maps in the art, or to withdraw the rejection for these claims.][3]

[3] As stated by M.P.E.P. §2144.03, "if the applicant traverses such an assertion the examiner should cite a reference in support of his or her position." Applicant *again* traverses the assertion at issue and calls upon the Examiner to furnish documentary proof of his assertion or else withdraw his contention.

Even if the rejection of the other claims were proper (which is not the case), the present rejection would again fail to set forth a *prima facie* case against these claims (16 and 20).

Applicants therefore respectfully request withdrawal of the rejection based on 35 U.S.C. §103(a).[4]

Respectfully submitted,
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CERTIFICATE OF MAILING (37 C.F.R. §1.8)

I hereby certify that this paper is being deposited with the United States Postal Service as first class mail in an envelope addressed to Commissioner of Patents and Trademarks, Washington D.C. 20231 on this 31 December 2003.

Marc P. Schuyler
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Dated: 31 December 2003

[4] Applicants also comment, with respect to paragraph 5 of the office action, that the underlined amended limitations of the allowed claims are not the only novel features of those claims.